

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Applicant: | Uwe Bacher | |
| Serial No.: 10/662,759 | Conf. No.: 1909 | Filing Date: Sept. 15, 2003 |
| Title of Application: | Medical Instrument | |
| Group Art Unit: 3731 | Examiner: Sam, Charles H. | |

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Appeal Brief Under 37 CFR §41.37

Dear Sir:

A Notice of Appeal from the final rejection of Claims 1-9, all pending non-withdrawn claims of U.S. Patent Application No. 10/662,759, being filed herewith, Appellant also files its Appeal Brief. A Claims Appendix is submitted herewith, as are Appendices related to evidence previously submitted and decisions related to the case.

(i) Real Party In Interest

The real party in interest is Karl Storz GmbH & Co. KG; Mittelstrasse 8, D-78532 Tuttlingen, Germany.

(ii) Related Appeals and Interferences

There are no related Appeals or Interferences.

(iii) Status Of Claims

Claims 1-9 stand rejected and are the subject of the instant Appeal. A copy of each of these claims is attached hereto in the Claims Appendix.

(iv) Status Of Amendments

There have been no Amendments since the last Final Office Action.

(v) Summary Of Claimed Subject Matter

Claim 1 is the independent claim. Claims 2-9 are the dependent claims.

Independent Claim 1

Claim 1 is directed to a medical instrument 1 with a hollow shaft 2, a handle 3 mounted on one end of the shaft 2, and a tool 4 mounted on the opposite end of shaft 2. See, e.g., Spec. ¶¶ 00025 and Fig. 1. The handle 3 consists of a rigid gripping

member 3a and a gripping member 3b that can be rotated in relation to the rigid gripping member 3a. *See, e.g.,* Spec. ¶ 00025 and Fig. 1. The handle 3 and the tool 4 are actively connected by at least one activation rod 6. *See, e.g.,* Spec. ¶ 00026 and Figs. 1 and 2a. Tool 4 is connected to activation rod 6 by means of a tool shaft 7. *See, e.g.,* Spec. ¶ 00027 and Figs. 2a and 2b. Both the activation rod 6 and the tool shaft 7 have protuberances 8 and/or recesses 9 which can be joined in a form-locking connection with the protuberances 8 and/or recesses 9 of the other respective component. *See, e.g.,* Spec. ¶ 00028 and Figs. 2a and 2b. The activation rod 6 and the tool shaft 7 are brought into engagement with one another by means of a movement exclusively in one direction that is essentially perpendicular to the longitudinal axis of the activation rod 6. *See, e.g.,* Spec. ¶ 00037. After engagement, the activation rod 6 and the tool shaft 7 are nonmoveably fixed relative to one another in all directions other than the one direction essentially perpendicular to the longitudinal axis of the activation rod 6. *See, e.g.,* Figs. 2a and 2b.

(vi) Grounds Of Rejection To Be Reviewed On Appeal

Claims 1-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over LeMarie, III et al. (U.S. Patent No. 5,366,477) in view of Strait (U.S. Patent No. 2,334,449).

(vii) Argument

Independent Claim 1

As described above, the present invention is directed to a medical instrument including a tool mounted on the end of a shaft which can be detachably secured on an activation rod by means of a tool shaft. This detachable connection is achieved by providing the tool shaft and the activation rod with protuberances and/or recesses, which can be joined in a form-locking connection, at least partially with corresponding recesses or protuberances of the other respective component. The connection is unique in that the corresponding recesses and protuberances are configured in such a way that the tool and the activation rod can be brought into engagement with one another by means of a movement exclusively in one direction essentially perpendicular to the longitudinal axis of the activation rod, and the components coupled to one another are fixed relative to one another in all other directions.

Claim 1 has previously been amended to further highlight this requirement by specifying: (i) that the tool and the activation rod can be brought into engagement with one another by means of a movement exclusively in one direction essentially perpendicular to the longitudinal axis of the activation rod, and (ii) that the components coupled to one another are nonmovably fixed relative to one another in all directions other than the one direction essentially perpendicular to the longitudinal axis of the activation rod. Thus, the components coupled to one another can be moved with respect to one

another only in one direction (i.e., the one direction essentially perpendicular to the longitudinal axis of the activation rod via which the components can be brought into engagement).

First, neither LeMarie, III et al. nor Strait discloses each and every element of Claim 1. LeMarie, III et al. discloses a medical instrument with a shaft, a handle mounted on the proximal end of the shaft, and a tool mounted on the distal end of the shaft. For activating the tool via the handle, both components are connected to one another by means of an activation rod. Furthermore, the tool can be secured detachably on the activation rod by means of a tool shaft, for which purpose the tool shaft and the activation rod have protuberances and/or recesses that can be joined in a form-locking connection, at least partially with corresponding recesses or protuberances of the other respective component.

In LeMarie, III et al., however, there is no disclosure, teaching or suggestion that the recesses and protuberances corresponding to one another are configured in such a way that the tool and the activation rod can be brought into engagement with one another by means of a movement exclusively in one direction essentially perpendicular to the longitudinal axis of the activation rod. LeMarie, III et al. states:

The link assembly **240** is assembled and disassembled in a bayonet-type fashion: a cavity **244** is sloped and twisted so that the actuator **248** must be rotated ninety degrees during insertion and removal.

LeMarie, III et al., Col. 9 Ln 40-43. Furthermore, in Paragraph 1 of the Office Action mailed on August 23, 2006, the Examiner explicitly recognized that LeMarie, III et al. does not disclose, teach, or suggest this element. Instead, the Examiner relies on Strait to supply the element of Claim 1 that is missing in LeMarie, III et al. Appellant, however, respectfully submits that Strait does not disclose, teach or suggest this element, such that any combination of LeMarie, III et al. and Strait would not render obvious the present invention, as claimed.

Strait discloses a line shaft coupling for detachably attaching and adjoining ends of a pair of shaft sections together. A male member 10 of the coupling includes a projecting stem 12 with a pair of dove-tail lugs 13 upon each of two inset sides of the stem 12, while a female member 11 of the coupling includes a notch 16 having a pair of dove-tail sockets 17 in the side walls thereof arranged in matched relation with respect to the dove-tail lugs 13. The dove-tail lugs 13 have side walls that are perpendicular to a longitudinal axis of the male member 10, and the dove-tail sockets 17 have side walls that are perpendicular to a longitudinal axis of the female member 11. Thus, the male member 10 and the female member 11 can be brought into engagement with one another by means of a movement in two directions essentially perpendicular to the longitudinal axes of the members.

More specifically, with reference to Figure 4 of Strait, the male member 10 could be positioned “over” the female member 11, and then the two can be brought into engagement by moving the male member 10 downward (i.e., in a direction into the page), or the male member 10 could be positioned “under” the female member 11, and then the two can be brought into engagement by moving the male member 10 upward (i.e., in a direction out of the page). Thus, Strait does not disclose, teach or suggest that recesses and protuberances of the pair of mating members are configured in such a way that the members can be brought into engagement with one another by means of a movement exclusively in one direction, as is required by Claim 1.

Moreover, this difference is a substantial one. Allowing engagement to be achieved in only one direction greatly facilitates assembly. With reference to Figures 2a and 2b of the present application, for example, in order to assemble the activation rod 6 and the tool shaft 7, the activation rod 6 can be properly aligned with the tool shaft 7, and then a downward force exerted until the activation rod 6 and the tool shaft 7 are coaxial. At this point, continued downward force can be applied to the activation rod 6 to maintain the axes of the activation rod 6 and the tool shaft 7 in proper alignment, and the assembly can be slid into hollow shaft 2. Since the activation rod 6 and the tool shaft 7 can be brought into engagement with one another by means of a movement exclusively in one direction, continued force in the assembly direction only ensures that the two components will be maintained in proper alignment.

This is not true with coupling arrangements like those disclosed in Strait, where the members being joined can be brought into engagement with one another by means of movement in two directions essentially perpendicular to the longitudinal axes of the members. With reference to Figure 4 of Strait, for example, in order to assemble the male member 10 and the female member 11, the male member 10 could be positioned "over" the female member 11, and then the two can be brought into engagement by moving the male member 10 downward (i.e., in a direction into the page) until the male member 10 and the female member 11 are coaxial. At this point, if continued downward force is applied to the male member 10, the male member 10 would continue to move downward with respect to the female member 11 such that the axes of the members would no longer be in proper alignment, and the threaded collar 20 could not be applied until the alignment was corrected, for example by continuing to move the male member 10 upward and downward with respect to the female member 11 until proper alignment of the axes was achieved. This is much more difficult than assembly of the present invention, as claimed, in which the activation rod 6 and the tool shaft 7 can be brought into engagement with one another by means of a movement exclusively in one direction, such that continued force in the assembly direction only ensures that the two components will be maintained in proper alignment.

Thus, Appellant respectfully submits that even if the two references were combined, the resulting device would simply be a medical instrument, as taught by LeMarie, III et al., having two members joinable together with a mating dove-tail arrangement such that the members can be brought into engagement with one another by means of movement in two directions essentially perpendicular to the longitudinal axes of the members, as taught by Strait. This is not what is claimed in Claim 1.

Finally, Appellant respectfully submits that there is absolutely no suggestion or teaching in either LeMarie, III et al. or Strait to modify either device such that members can be brought into engagement with one another by means of a movement exclusively in one direction. In fact, the references teach away from such a modification because each reference discloses its own method for linking shaft sections together as described above. One skilled in the art who reads the disclosures of LeMarie, III et al. and Strait would be motivated to solve the problem of linking shaft sections by utilizing the techniques taught in either of those references. One skilled in the art would not be motivated by the teachings of LeMarie, III et al. and Strait to use a third technique such as the one taught by Claim 1.

For the foregoing reasons, Appellant respectfully submits that Claim 1 is neither anticipated nor obvious in light of either LeMarie, III et al. or Strait and is therefore patentable over the references of record, and earnestly solicits allowance of the same.

Dependent Claim 5

Claim 5 depends upon and adds requirements to Claims 1-4. Thus, Claim 5 is patentable over the references of record for the reasons described above. Additionally, Claim 5 is patentable because the combination of LeMarie, III et al. and Strait proposed by the Examiner could not possibly include a device which discloses the additional requirements of Claim 5. Claim 5 requires, in addition to the disclosure of Claims 1-4, an activation rod with tangential leveling and an overhanging head area on one end to connect with a corresponding tool shaft having an overlap for receiving the head area and a recess for receiving the tangential leveling of the activation rod.

In Paragraph 1 of the Office Action mailed on August 23, 2006, the Examiner argued that the coupling of Strait combined with the disclosure of LeMarie, III et al. renders the claimed invention obvious. Thus, the coupling method disclosed by Strait must replace the coupling method disclosed in Figures 11a-11b of LeMarie, III et al. and their corresponding description, to which the Examiner refers in the most recent Office Action on page 3. Using the coupling method of Strait and the coupling method of LeMarie, III et al. simultaneously is neither practical nor possible. For this reason, rejecting Claim 5 with reference to this portion of LeMarie, III et al. is inappropriate because the coupling disclosed in Strait could not be used in conjunction with the coupling disclosed in Figures 11a-11b of LeMarie, III et al.

Dependent Claim 8

Claim 8 is dependent upon and adds requirements to Claims 1-7. Therefore, Claim 8 is patentable for the reasons described above in reference to Claims 1 and 5. Claim 8 requires, in addition to the disclosure of Claims 1-7, use of a spring element placed between the activation rod and a medical tool for the transmission of pulling or pushing forces in the coupling area. Claim 8 is patentable on the additional ground that use of a spring in the combination of LeMarie, III et al. and Strait would not be practicable or possible.

As discussed above, the Examiner has argued that the combination of LeMarie, III et al. and Strait renders the claimed invention obvious. The use of a spring as disclosed by LeMarie, III et al. with the coupling method of Strait would not be desirable. As seen and described in Figures 1 and 3 and page 1 of Strait, a threaded collar 20 is used to secure male member 10 and female member 11 together. The spring of LeMarie, III et al. would have no effect on the coupling, since the male and female members are fixed relative to one another by the threaded collar 20. For this reason, Claim 8 is patentable over the references of record.

Conclusion

For the foregoing reasons, Appellant respectfully submits that the claimed invention embodied in each of Claims 1-9 is patentable over the cited prior art. As such, Appellant respectfully requests that the rejections of each of Claims 1-9 be reversed and the Examiner be directed to issue a Notice of Allowance allowing each of Claims 1-9.

Respectfully submitted,

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**Claims Appendix
to Appeal Brief Under 37 CFR §41.37
Serial No. 10/662,759**

1. Medical instrument with a shaft, a handle mounted on the proximal end of the shaft, and a tool mounted on the distal end of the shaft and activated by the handle, where the handle and the tool are in active connection by means of at least one activation rod and the tool can be secured detachably by means of a tool shaft on the activation rod, for which purpose the tool shaft and the activation rod have protuberances and/or recesses, which can be joined in a form-locking connection, at least partially with corresponding recesses or protuberances of the other respective component wherein the recesses and protuberances corresponding to one another are configured in such a way that the tool and the activation rod can be brought into engagement with one another by means of a movement exclusively in one direction essentially perpendicular to the longitudinal axis of the activation rod, and the components coupled to one another are nonmoveably fixed relative to one another in all directions other than the one direction essentially perpendicular to the longitudinal axis of the activation rod.

2. Medical instrument according to claim 1, wherein the tool can be secured to the activation rod in such a way that forces can be transmitted in the longitudinal direction of the activation rod and/or torsion forces can be transmitted to the tool.

3. Medical instrument according to claim 2, wherein the tool and the activation rod can be connected with one another by means of a motion essentially perpendicular to the longitudinal axis of the activation rod.

4. Medical instrument according to claim 3, wherein the activation rod and the tool shaft are configured as essentially round in cross-section.

5. Medical instrument according to claim 4, wherein in the area of the distal end of the round activation rod at least on one side a tangential leveling is formed on the activation rod in such a way that the distal end of the activation rod further has a head area overhanging the leveling in radial direction and the proximal area of the tool shaft has an overlap for receiving the head area of the activation rod and a recess corresponding to the tangential leveling of the activation rod.

6. Medical instrument according to claim 5, wherein the tangential leveling of the activation rod is configured as a middle stud leveled from two opposite sides and the corresponding recess on the tool shaft is configured as a radial slit.

7. Medical instrument according to claim 6, wherein the activation rod and the tool can be coupled to one another by means of at least one stud running diagonally to the instrument longitudinal axis, where the stud on the one hand is stored in a hole

bored in the activation rod or in the tool shaft and on the other hand engages in a corresponding recess in the tool shaft or in the activation rod.

8. Medical instrument according to claim 7, wherein, for the transmission of pulling or pushing forces in the coupling area, a spring element is placed between the activation rod and the tool.

9. Medical instrument according to claim 8, wherein the tool can be activated by means of the spring element.

**Evidence Appendix
to Appeal Brief Under 37 CFR §41.37
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No evidence of any kind, including evidence submitted under 37 CFR 1.130, 1.131 or 1.132, has been entered by the Examiner and relied upon by Appellant in the appeal.

**Related Proceedings Appendix
to Appeal Brief Under 37 CFR §41.37
Serial No. 10/662,759**

There are no related Appeals or Interferences. As such, there are no decisions rendered by a court or the Board in any such Appeals or Interferences.